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PAINTING ROLLER

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This invention relates to applicators for paint and the like and, more particularly, to such as the roller type for applying paint and other coating materials to walls, ceilings and other surfaces.

An object of my invention is to simplify and reduce the cost of the usual painting applicator by making the painting sleeve simple to remove, easier to clean and eliminating the cost of the conventional expansible roller.

Another object of my invention is to provide an improved roller type applicator for paint and the like.

A further object of my invention is to provide an inexpensive applicator of the above type, which is of simple construction and which may be economically fabricated.

A still further object of my invention is to provide an applicator of the above type which could be easily and quickly assembled or disassembled for cleaning and changing sleeves.

These and other objects and advantages will become apparent from the following detailed description when taken with the accompanying drawings. It will be understood that the drawings are for the purposes of illustration and do not define the scope or limits of the invention, reference being had for the latter purpose to the appended claims.

In the drawings, wherein like reference characters denote like parts in the several views:

FIGURE 1 is a fragmentary elevational view, with the paint-carrying sleeve in longitudinal section, indicating, by also showing a dotted-line position of the right-hand head, the permitted relative movement of said head with respect to the left-hand head.

FIGURE 2 is a transverse sectional view on the line II—II of FIGURE 1, in the direction of the arrows and to a larger scale.

FIGURE 3 is a longitudinal sectional view of the head at the left-hand end of the supporting shaft of FIGURE 1, on the line III—III, shown mounted on a fragmentary portion of the supporting shaft and to the scale, of FIGURE 2, in the direction of the arrows.

FIGURE 4 is a transverse sectional view on the line IV—IV of FIGURE 1, in the direction of the arrows and to the scale of FIGURE 2.

FIGURE 5 is a longitudinal sectional view of the right-hand head of FIGURE 1, on the line V—V, shown mounted on a fragmentary portion of the supporting shaft and to the scale, of FIGURE 4, in the direction of the arrows.

Referring now to the drawing in detail, the paint applicator, generally designated **11**, comprises a handle **12** which may be formed of wood, plastic, or other suitable material, a shaft **13**, one end of which is secured to said handle, and a roller generally designated **14**. The handle-engaging end portion of the shaft **13** may be threaded for alternative use with a relatively long or extension handle. The handle **12**, which is spaced from the roller **14**, is preferably located opposite the middle of said roller. The other end of the shaft **13**, conveniently formed from a relatively thin, say, for example, ¼" in diameter metal, desirably "Bethanized" or nickel-plated steel, rod, is formed as a straight axle portion **15** normally centrally disposed within the roller **14**. The axle portion **15** is of a length approximately equal to that of the

roller **14**, with sufficient clearance to avoid interfering with its rotary movement.

The roller **14** comprises an elongated hollow cylindrical sleeve **16**, which may conveniently be formed of cardboard of the like, carrying a paint-absorbing cover **17** on the outside thereof. A suitable paint-absorbing covering may be employed such as, for example, lamb's wool, woven fiber pile, or other material suitable or conventional for the purpose. The inner or right-hand end portion of the sleeve **16**, as viewed in FIGURE 1, is frictionally engaged by and carried on an end cap, mandrel or head **18**. The cap **18** may be conveniently formed of plastic material, examples being linear polyethylene and nylon, or the like. It consists of a relatively-thin annular or hollow cylindrical ring or rim portion **19** having an outside diameter less than that of the inside diameter of the sleeve **16** and carrying on its peripheral surface a plurality of outstanding ribs **21**, in this instance twelve.

The outer edges of said ribs are beveled or tapered to the left, as indicated at **22**, and their outer edges merge into an outstanding annular flange **23**. The outer diameter of the flange **23** approximately corresponds with the outer diameter of the sleeve **16**, so as to form a stop for said sleeve against movement therebeyond to the right, as viewed in FIGURE 1.

The diameter of the outer surface of the ribs **21** is slightly larger than the inner diameter of the sleeve **16** so that, in applying said sleeve to the cap **18**, the latter is wedged in place, with the sleeve passing easily over the first portions of the tapered or beveled parts **22** and then frictionally gripping tightly the remainder of the ribs **21**. Then said sleeve **16** is frictionally held in place on the cap **18** and prevented from undesired rotary or longitudinal movement with respect thereto.

The cap **18** is provided with a hub portion **20** which is normally directly carried or journalled on the axle portion **15** with only sufficient tolerance for free turning thereabout. Said hub portion **20** is connected to the ring portion **19** by transverse annular webs **24** and **25**, in turn connected to and by a hollow cylindrical web **26**, leaving a cylindrical aperture or pocket **27**. The structure between the hub **20**, the webs **24**, **25**, **26** and the ring **19** is braced by a plurality of, in this instance light, radial webs **28** extending from the outer surface of the hub **20** to the inner surface of the ring **19** and longitudinally to the inner surfaces of the webs **24**, **25** and **26**, thereby providing a light but rigid end cap **18**.

Said cap **18** desirably normally abuts a washer **31** which, like the shaft **13**, may be formed of nickel-plated steel or other suitable material. The washer **31** in turn normally engages stop means which may be projections **32** on the axle portion **15** and with the washer **31** normally housed or enclosed in the pocket **27**. The projections **32** may be formed in any desired manner as by upsetitng or pinching out portions of the metal of the axle **15**, as viewed most clearly in FIGURE 5. This limits movement of said cap **18** to the right or toward the angular or axle-supporting portion **33** of the shaft **13**, while not interfering with the movement of said cap **18** to the left, as represented by the dotted-line showing thereof, or even on to where it would engage corresponding stop means, such as crimped out or upset portions or projectings **34** near the free or left-hand end portion of the axle **15**, as viewed in FIGURE 1.

The left-hand end portion of the sleeve **16** is normally supported on an end cap, mandrel or head **35**, which may be formed of plastic or other suitable material like the cap **18**, but which is of somewhat different construction. Like the cap **18**, however, it has a hub portion **36** normally directly carried or journalled on the axle **15** with only sufficient clearance to allow for free rotation. From the hub portion **36** outstands transversely an annular web